

STIC Search

P.D.: 2/14/2003

gale 10 / 761675

Page 1

=> b hcap

FILE 'HCAPLUS' ENTERED AT 15:34:49 ON 03 JUL 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 3 Jul 2006 VOL 145 ISS 2

FILE LAST UPDATED: 2 Jul 2006 (20060702/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d bib abs hitind hitstr retable 152 tot

L52 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:681441 HCAPLUS

DN 141:191166

TI Catalytic process for the low-temperature cleavage of an oxidation mixture comprising sec-butylbenzene hydroperoxide and/or cumene hydroperoxide in the manufacture of MEK and/or acetone with reduced byproduct formation

IN Black, Jesse Raymond

PA USA

SO U.S. Pat. Appl. Publ., 11 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|--|--------------|
| PI | US2004162446 | A1 | 20040819 | 2004US-0761675 | 20040121 <-- |
| | WO2004074227 | A1 | 20040902 | 2004WO-US03839 | 20040211 |
| | W: | | | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI | |
| | RW: | | | BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | |
| | EP---1603856 | A1 | 20051214 | 2004EP-0710169 | 20040211 |
| | R: | | | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | |
| | BR2004007409 | A | 20060110 | 2004BR-0007409 | 20040211 |
| | CN---1771216 | A | 20060510 | CN 2004-80004056 | 20040211 |
| PRAI | 2003US-447845P | P | 20030214 | | |
| | 2004WO-US03839 | W | 20040211 | | |

AB A process for cleaving an oxidation product comprising sec-butylbenzene hydroperoxide and/or cumene hydroperoxide for the production of MEK and or acetone, which reduces the production of non-recoverable byproducts from dimethylbenzyl alc. and Et Me benzyl carbinol, used in the production of α -methylstyrene, α -ethylstyrene, and 2-phenyl-2-butene, is

Applicant

noble jarrell 03/07/2006

described and a process flow diagram presented.

IC ICM C07C-0037/08

INCL 568385000; 568768000

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 48

ST butanone acetone manuf butylbenzene cumene
hydroperoxide low temp cleavage; MEK acetone
manuf butylbenzene cumene hydroperoxide low temp
cleavage; methylstyrene ethylstyrene phenylbutene manuf butylbenzene
cumene hydroperoxide cleavage

IT Ketones, preparation

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)

(aliphatic; catalytic process for the low-temperature cleavage of an oxidation
mixture comprising sec-butylbenzene
hydroperoxide and/or cumene hydroperoxide
in the manufacture of MEK and/or acetone)

IT Hydroperoxides

RL: EPR (Engineering process); PEP (Physical, engineering or chemical
process); RCT (Reactant); PROC (Process); RACT (Reactant or
reagent)

(aryl; catalytic process for the low-temperature cleavage of an oxidation mixture
comprising sec-butylbenzene hydroperoxide
and/or cumene hydroperoxide in the manufacture of
MEK and/or acetone)

IT Bond cleavage

(catalytic process for the low-temperature cleavage of an oxidation mixture
comprising sec-butylbenzene hydroperoxide
and/or cumene hydroperoxide in the manufacture of
MEK and/or acetone)

IT Alcohols, preparation

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)

(catalytic process for the low-temperature cleavage of an oxidation mixture
comprising sec-butylbenzene hydroperoxide
and/or cumene hydroperoxide in the manufacture of
MEK and/or acetone and dimethylbenzyl alc. and Et Me
benzyl carbinol)

IT Process control

(in a catalytic process for the low-temperature cleavage of an oxidation mixture
comprising sec-butylbenzene hydroperoxide
and/or cumene hydroperoxide in the manufacture of
MEK and/or acetone)

IT Acids, uses

RL: CAT (Catalyst use); EPR (Engineering process); PEP (Physical,
engineering or chemical process); PROC (Process); USES (Uses)
(inorg.; cleavage reaction catalysts in a process for the low-temperature
cleavage of an oxidation mixture comprising sec-
butylbenzene hydroperoxide and/or cumene
hydroperoxide in the manufacture of MEK and/or
acetone)

IT Bond cleavage catalysts

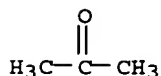
(mineral acids in a process for the low-temperature cleavage of an oxidation
mixture comprising sec-butylbenzene
hydroperoxide and/or cumene hydroperoxide
in the manufacture of MEK and/or acetone)

IT Phenols, preparation

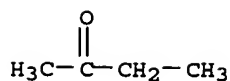
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)

(phenol; catalytic process for the low-temperature cleavage of an
oxidation mixture comprising sec-butylbenzene
hydroperoxide and/or cumene hydroperoxide
in the manufacture of MEK and/or acetone and)

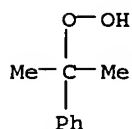
- IT 67-64-1P, Acetone, preparation 78-93-3P,
Mek, preparation
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(catalytic process for the low-temperature cleavage of an oxidation mixture
comprising **sec-butylbenzene hydroperoxide**
and/or **cumene hydroperoxide** in the manufacture of
MEK and/or acetone with reduced byproduct formation)
- IT 80-15-9, Cumene hydroperoxide
52208-72-7, sec-Butylbenzene
hydroperoxide
RL: EPR (Engineering process); PEP (Physical, engineering or chemical
process); RCT (Reactant); PROC (Process); RACT (Reactant or
reagent)
(catalytic process for the low-temperature cleavage of an oxidation mixture
comprising **sec-butylbenzene hydroperoxide**
and/or **cumene hydroperoxide** in the manufacture of
MEK and/or acetone with reduced byproduct formation)
- IT 7601-90-3, Perchloric acid, uses 7664-38-2, Phosphoric acid, uses
7664-93-9, Sulfuric acid, uses 7783-05-3, Sulfuric acid anhydride
RL: CAT (Catalyst use); EPR (Engineering process); PEP (Physical,
engineering or chemical process); PROC (Process); USES (Uses)
(cleavage reaction catalysts in a process for the low-temperature cleavage of
an oxidation mixture comprising **sec-butylbenzene**
hydroperoxide and/or **cumene hydroperoxide**
in the manufacture of MEK and/or acetone)
- IT 7732-18-5, Water, uses
RL: EPR (Engineering process); NUU (Other use, unclassified); PEP
(Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in the catalytic process for the low-temperature cleavage of an oxidation mixture
comprising **sec-butylbenzene hydroperoxide**
and/or **cumene hydroperoxide** in the manufacture of
MEK and/or acetone with reduced byproduct formation)
- IT 98-83-9P, α -Methylstyrene, preparation 108-95-2P,
Phenol, preparation 2039-93-2P, α -Ethylstyrene
2082-61-3P, 2-Phenyl-2-butene
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(preparation of)
- IT 67-64-1P, Acetone, preparation 78-93-3P,
Mek, preparation
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(catalytic process for the low-temperature cleavage of an oxidation mixture
comprising **sec-butylbenzene hydroperoxide**
and/or **cumene hydroperoxide** in the manufacture of
MEK and/or acetone with reduced byproduct formation)
- RN 67-64-1 HCAPLUS
CN 2-Propanone (9CI) (CA INDEX NAME)



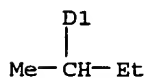
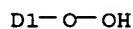
- RN 78-93-3 HCAPLUS
CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



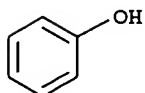
IT 80-15-9, Cumene hydroperoxide
 52208-72-7, sec-Butylbenzene
 hydroperoxide
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical
 process); RCT (Reactant); PROC (Process); RACT (Reactant or
 reagent)
 (catalytic process for the low-temperature cleavage of an oxidation mixture
 comprising sec-butylbenzene hydroperoxide
 and/or cumene hydroperoxide in the manufacture of
 MEK and/or acetone with reduced byproduct formation)
 RN 80-15-9 HCAPLUS
 CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



RN 52208-72-7 HCAPLUS
 CN Hydroperoxide, (1-methylpropyl)phenyl (9CI) (CA INDEX NAME)



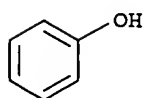
IT 108-95-2P, Phenol, preparation
 RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
 (Physical, engineering or chemical process); PREP (Preparation);
 PROC (Process)
 (preparation of)
 RN 108-95-2 HCAPLUS
 CN Phenol (8CI, 9CI) (CA INDEX NAME)



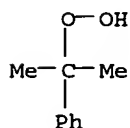
L52 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:646902 HCAPLUS
 DN 139:232130
 TI Phenol production catalyst

AU Takai, Toshihiro
 CS Catalysis Science Lab., Mitsui Chemicals, Inc., Sodegaura, 299-0265, Japan
 SO Shokubai (2003), 45(5), 354-359
 CODEN: SHKUAJ; ISSN: 0559-8958
 PB Shokubai Gakkai
 DT Journal; General Review
 LA Japanese
 AB A review. In phenol production, the most economical process is the cumene hydroperoxide route in which novel catalytic process have been recently developed: The novel catalytic process in the alkylation of benzene followed by oxidation and the cleavage of cumene hydroperoxide are reviewed.
 CC 45-0 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 Section cross-reference(s): 67
 ST review phenol cumene hydroperoxide route catalyst; alkylation benzene catalyst review; cleavage cumene hydroperoxide catalyst review
 IT Alkylation catalysts
 Oxidation catalysts
 (catalyst for manufacture of phenol by cumene hydroperoxide route)
 IT Bond cleavage
 (catalyst; catalyst for manufacture of phenol by cumene hydroperoxide route)
 IT 108-95-2P, Phenol, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (catalyst for manufacture of phenol by cumene hydroperoxide route)
 IT 80-15-9P, Cumene hydroperoxide
 RL: IMF (Industrial manufacture); RCT (Reactant);
 PREP (Preparation); RACT (Reactant or reagent)
 (catalyst for manufacture of phenol by cumene hydroperoxide route)
 IT 108-95-2P, Phenol, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (catalyst for manufacture of phenol by cumene hydroperoxide route)
 RN 108-95-2 HCAPLUS
 CN Phenol (8CI, 9CI) (CA INDEX NAME)

look up



IT 80-15-9P, Cumene hydroperoxide
 RL: IMF (Industrial manufacture); RCT (Reactant);
 PREP (Preparation); RACT (Reactant or reagent)
 (catalyst for manufacture of phenol by cumene hydroperoxide route)
 RN 80-15-9 HCAPLUS
 CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



L52 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:117778 HCAPLUS

DN 138:172244
 TI Hydrogenation process for the manufacture of isopropanol from
 acetone
 IN Chewter, Leslie Andrew; Dekker, Wilhelmus Cornelis Nicolaas; Lecrivain,
 Stephane Jean Pierre; Mesters, Carolus Matthias Anna Maria; Rogers, Andrew
 Neave; Singoredjo, Lydia
 PA Shell Internationale Research Maatschappij BV, Neth.
 SO PCT Int. Appl., 16 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

102nd date

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|--|-----------------|----------|
| PI | WO2003011801 | A2 | 20030213 | 2002WO-EP12650 | 20021112 |
| | WO2003011801 | A3 | 20040219 | | |
| | W: | | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW | | |
| | RW: | | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | |
| | AU2002342904 | A1 | 20030217 | 2002AU-0342904 | 20021112 |
| | BR2002014170 | A | 20040928 | 2002BR-0014170 | 20021112 |
| | EP---1463700 | A2 | 20041006 | 2002EP-0779551 | 20021112 |
| | R: | | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | |
| | JP2004536147 | T2 | 20041202 | 2003JP-0516996 | 20021112 |
| | CN---1585734 | A | 20050223 | 2002CN-0822695 | 20021112 |
| | US2003149314 | A1 | 20030807 | 2002US-0294192 | 20021114 |
| | US---6939995 | B2 | 20050906 | | |
| | ZA2004002797 | A | 20041223 | 2004ZA-0002797 | 20040413 |
| PRAI | 2001EP-0309673 | A | 20011116 | | |
| | 2002WO-EP12650 | W | 20021112 | | |

AB Process for the preparation of isopropanol, wherein a benzene-contaminated feed of acetone is hydrogenated to obtain isopropanol and hydrogenation products of benzene. The combination of this process with a process for the preparation of phenol, by the alkylation of the benzene with isopropanol or propylene into cumene, followed by oxidation of this intermediate into cumene hydroperoxide and acid cleavage of the cumene hydroperoxide into phenol and benzene-containing acetone, and the combination of such a process with a series of separation steps, are claimed. A process flow diagram is presented.

IC ICM C07C-0029/00

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 23, 25, 48

ST isopropanol manuf acetone hydrogenation; cumene hydroperoxide manuf acid cleavage phenol acetone manuf

IT Bond cleavage
 (acid; of cumene hydroperoxide into phenol and benzene-containing acetone)

IT Hydrogenation
 (hydrogenation process for the manufacture of isopropanol from acetone)

IT Hydrogenation catalysts
 (nickel in a hydrogenation process for the manufacture of isopropanol from acetone)

IT Oxidation
 (of cumene into cumene hydroperoxide)

IT 7440-02-0, Nickel, processes 496926-74-0, Leuna 6512AS

RL: CAT (Catalyst use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(catalyst; in a hydrogenation process for the manufacture of isopropanol from acetone)

IT 67-63-0P, Isopropanol, preparation 67-64-1P, Acetone, preparation

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(hydrogenation process for the manufacture of isopropanol from acetone)

IT 71-43-2P, Benzene, preparation

RL: BYP (Byproduct); EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(in a hydrogenation process for the manufacture of isopropanol from acetone)

IT 1333-74-0, Hydrogen, reactions

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); RGT (Reagent); PROC (Process); RACT (Reactant or reagent)
(in a hydrogenation process for the manufacture of isopropanol from acetone)

IT 80-15-9P, Cumene hydroperoxide

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(preparation and acid cleavage of)

IT 108-95-2P, Phenol, preparation

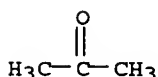
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(preparation from cumene hydroperoxide of)

IT 67-64-1P, Acetone, preparation

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(hydrogenation process for the manufacture of isopropanol from acetone)

RN 67-64-1 HCAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)

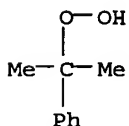


IT 80-15-9P, Cumene hydroperoxide

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(preparation and acid cleavage of)

RN 80-15-9 HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)

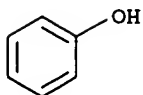


IT 108-95-2P, Phenol, preparation

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP

(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(preparation from cumene hydroperoxide of)

RN 108-95-2 HCAPLUS
CN Phenol (8CI, 9CI) (CA INDEX NAME)



L52 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:750488 HCAPLUS

DN 137:264716

TI Procedure for the acid-catalyzed cleavage of cumene
hydroperoxide into acetone and phenol with
heating of the cleavage mixture for decreased byproduct formation

IN Gerlich, Otto; Pompetzki, Werner; Van Barneveld, Heinrich

PA Phenolchemie G.m.b.H. & Co. K.-G., Germany

SO Ger. Offen., 4 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | DE--10111889 | A1 | 20021002 | 2001DE-1011889 | 20010313 |
| | BE---1014696 | A5 | 20040302 | 2002BE-0000172 | 20020312 |
| PRAI | 2001DE-1011889 | A | 20010313 | | |

AB The conventional acid-catalyzed cleavage of cumene
hydroperoxide during combined phenol acetone
production by the Hock procedure leads to the formation of cresols,
particularly ortho-cresol and other unwanted byproducts with concomitant
reduction of product yield and increased processing expenditure. By heating
the acid-cleavage mixture to >80° for ≥15 min, the formation
of byproducts, in particular cresols, is reduced.

IC ICM C07C-0037/08

ICS C07C-0039/04; C07C-0045/53; C07C-0049/08; C07C-0027/00

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 23, 25, 48

ST phenol acetone manuf cumene
hydroperoxide cleavage; cresol formation redn phenol
acetone manuf; heating cresol formation redn phenol
acetone manuf; byproduct formation redn phenol
acetone manuf

IT Bond cleavage

Heating

(procedure for the acid-catalyzed cleavage of cumene

hydroperoxide into acetone and phenol with

heating of the cleavage mixture for decreased byproduct formation)

IT Heat exchangers

(procedure for the acid-catalyzed cleavage of cumene

hydroperoxide into acetone and phenol with

heating of the cleavage mixture for decreased byproduct formation using)

IT Heat transfer

(procedure for the acid-catalyzed cleavage of cumene

hydroperoxide into acetone and phenol with

heating of the cleavage mixture for decreased byproduct formation via)

IT 95-48-7P, o-Cresol, preparation 1319-77-3P, Cresol

RL: BYP (Byproduct); PREP (Preparation)

(procedure for the acid-catalyzed cleavage of cumene

hydroperoxide into acetone and phenol with

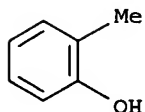
heating of the cleavage mixture for decreased byproduct formation)

IT 67-64-1P, Acetone, preparation 108-95-2P,
 Phenol, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (procedure for the acid-catalyzed cleavage of cumene
 hydroperoxide into acetone and phenol with
 heating of the cleavage mixture for decreased byproduct formation)

IT 80-15-9, Cumene hydroperoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (procedure for the acid-catalyzed cleavage of cumene
 hydroperoxide into acetone and phenol with
 heating of the cleavage mixture for decreased byproduct formation)

IT 95-48-7P, o-Cresol, preparation 1319-77-3P, Cresol
 RL: BYP (Byproduct); PREP (Preparation)
 (procedure for the acid-catalyzed cleavage of cumene
 hydroperoxide into acetone and phenol with
 heating of the cleavage mixture for decreased byproduct formation)

RN 95-48-7 HCAPLUS
 CN Phenol, 2-methyl- (9CI) (CA INDEX NAME)



RN 1319-77-3 HCAPLUS
 CN Phenol, methyl- (9CI) (CA INDEX NAME)

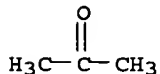


D1-OH

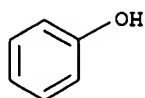
D1-Me

IT 67-64-1P, Acetone, preparation 108-95-2P,
 Phenol, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (procedure for the acid-catalyzed cleavage of cumene
 hydroperoxide into acetone and phenol with
 heating of the cleavage mixture for decreased byproduct formation)

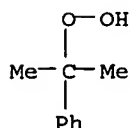
RN 67-64-1 HCAPLUS
 CN 2-Propanone (9CI) (CA INDEX NAME)



RN 108-95-2 HCAPLUS
 CN Phenol (8CI, 9CI) (CA INDEX NAME)



IT 80-15-9, Cumene hydroperoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (procedure for the acid-catalyzed cleavage of cumene
 hydroperoxide into acetone and phenol with
 heating of the cleavage mixture for decreased byproduct formation)
 RN 80-15-9 HCAPLUS
 CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| ===== | ----- | ----- | ----- | ----- | ----- |
| Anon | | | | DE---3222533 A1 | HCAPLUS |
| Anon | | | | WO---9827039 A1 | HCAPLUS |
| Anon | | | | DE-AS1112527 | |
| Anon | | | | US-PS2757209 | |
| Anon | | | | US-PS5254751 | |

LS2 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:246556 HCAPLUS

DN 134:266097

TI Process for the preparation of phenol, acetone and
 cyclohexanone by the cleavage of aryl hydroperoxides

IN Van, Barnefeld Heinrich; Pompetzki, Werner; Gerlich, Otto; Kleinloh,
 Werner

PA Phenolchemie G.m.b.H. & Co. K.-G., Germany

SO Eur. Pat. Appl., 6 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

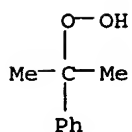
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | EP---1088808 | A1 | 20010404 | 2000EP-0117402 | 20000811 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | DE--19946886 | A1 | 20010405 | 1999DE-1046886 | 19990930 |
| | BG---104777 | A | 20010928 | 2000BG-0104777 | 20000919 |
| | JP2001097902 | A2 | 20010410 | 2000JP-0294584 | 20000927 |
| | BR2000004525 | A | 20010417 | 2000BR-0004525 | 20000928 |
| | CN---1290680 | A | 20010411 | 2000CN-0129069 | 20000929 |
| PRAI | 1999DE-1046886 | A | 19990930 | | |

OS CASREACT 134:266097

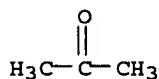
AB Phenol, acetone, and cyclohexanone are prepared in high
 yield and selectivity by the oxidation of a mixture of cumene and
 cyclohexylbenzene (mole ratio of $\geq 3:1$, resp.) with oxygen-containing
 gases to give a mixture of cumene hydroperoxide and
 cyclohexylbenzene hydroperoxide, followed by cleavage of the
 hydroperoxides in the presence of an acid cleavage catalyst (e.g.,
 sulfuric acid).

IC ICM C07C-0037/08

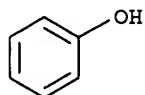
ICS C07C-0045/53
CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 23, 24, 45
ST phenol acetone cyclohexanone prepn; aryl hydroperoxide
cleavage prepn phenol acetone cyclohexanone
IT Hydroperoxides
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(aryl; Process for the preparation of phenol and acetone
and cyclohexanone by the preparation and cleavage of)
IT Decomposition catalysts
(bond cleavage catalysts; acids for the conversion of cumene
hydroperoxide and cyclohexylbenzene hydroperoxide into
phenol and acetone and cyclohexanone)
IT Bond cleavage
(catalysts; acids for the conversion of cumene
hydroperoxide and cyclohexylbenzene hydroperoxide into
phenol and acetone and cyclohexanone)
IT Acids, uses
RL: CAT (Catalyst use); USES (Uses)
(cleavage catalysts for the conversion of cumene
hydroperoxide and cyclohexylbenzene hydroperoxide into
phenol and acetone and cyclohexanone)
IT Oxidation
(liquid-phase; of cumene and cyclohexylbenzene in the preparation of
cumene hydroperoxide and cyclohexylbenzene
hydroperoxide)
IT Bond cleavage
(of cumene hydroperoxide and cyclohexylbenzene
hydroperoxide in the preparation of phenol and acetone
and cyclohexanone)
IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in a process for the preparation of phenol, acetone and
cyclohexanone by the cleavage of aryl hydroperoxides)
IT 7664-93-9, Sulfuric acid, uses
RL: CAT (Catalyst use); USES (Uses)
(process for the preparation of phenol, acetone and
cyclohexanone by the cleavage of aryl hydroperoxides)
IT 98-82-8, Cumene 827-52-1, Cyclohexylbenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the preparation of phenol, acetone and
cyclohexanone by the cleavage of aryl hydroperoxides)
IT 80-15-9P, Cumene hydroperoxide 20614-61-3P,
Cyclohexylbenzene hydroperoxide
RL: RCT (Reactant); SPN (Synthetic preparation);
PREP (Preparation); RACT (Reactant or reagent)
(process for the preparation of phenol, acetone and
cyclohexanone by the cleavage of aryl hydroperoxides)
IT 67-64-1P, Acetone, preparation 108-94-1P,
Cyclohexanone, preparation 108-95-2P, Phenol,
preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(process for the preparation of phenol, acetone and
cyclohexanone by the cleavage of aryl hydroperoxides)
IT 80-15-9P, Cumene hydroperoxide
RL: RCT (Reactant); SPN (Synthetic preparation);
PREP (Preparation); RACT (Reactant or reagent)
(process for the preparation of phenol, acetone and
cyclohexanone by the cleavage of aryl hydroperoxides)
RN 80-15-9 HCAPLUS
CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



IT 67-64-1P, Acetone, preparation 108-95-2P,
 Phenol, preparation
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (process for the preparation of phenol, acetone and
 cyclohexanone by the cleavage of aryl hydroperoxides)
 RN 67-64-1 HCAPLUS
 CN 2-Propanone (9CI) (CA INDEX NAME)



RN 108-95-2 HCAPLUS
 CN Phenol (8CI, 9CI) (CA INDEX NAME)



RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| Arkell, A | 1976 | | | US---3959381 A | HCAPLUS |

L52 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:246555 HCAPLUS

DN 134:266096

TI Oxidative and bond-cleavage process for the preparation of phenol
 , methyl ethyl ketone and acetone
 from mixtures of secondary-butylbenzene and cumene

IN Pompetzki, Werner; Gerlich, Otto; Kleinloh, Werner

PA Phenolchemie G.m.b.H. & Co. K.-G., Germany

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| EP---1088807 | A1 | 20010404 | 2000EP-0117401 | 20000811 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| DE--19946887 | A1 | 20010405 | 1999DE-1046887 | 19990930 |
| BG---104776 | A | 20010531 | 2000BG-0104776 | 20000919 |
| JP2001097901 | A2 | 20010410 | 2000JP-0294583 | 20000927 |
| BR2000004487 | A | 20010529 | 2000BR-0004487 | 20000927 |
| CN---1290682 | A | 20010411 | 2000CN-0129072 | 20000929 |
| PRAI 1999DE-1046887 | A | 19990930 | | |

OS CASREACT 134:266096

AB Phenol, Me Et ketone, and
 acetone are prepared in high yield and selectivity by the oxidation of
 mixts. of secondary-butylbenzene and cumene (the cumene content in the

102(b)
Date

mixture is 3-15%) with oxygen-containing gases (e.g., air) to form a mixture of secondary-butylbenzene hydroperoxide and cumene hydroperoxide which are subjected to bond cleavage in the presence of an acid (e.g., sulfuric acid) catalyst.

IC ICM C07C-0037/08

ICS C07C-0045/53

CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

Section cross-reference(s): 23, 45

ST phenol MEK acetone prepn; butylbenzene

cumene oxidn; aryl hydroperoxide cleavage prepn phenol

MEK acetone

IT Hydroperoxides

RL: RCT (Reactant); SPN (Synthetic preparation);

PREP (Preparation); RACT (Reactant or reagent)

(aryl; preparation and cleavage of secondary-butylbenzene hydroperoxide and cumene hydroperoxide into phenol and MEK and acetone)

IT Acids, uses

RL: CAT (Catalyst use); USES (Uses)

(bond cleavage catalysts for the conversion of secondary-butylbenzene hydroperoxide and cumene hydroperoxide into phenol and MEK and acetone)

IT Decomposition catalysts

(bond cleavage catalysts; acids for the conversion of secondary-butylbenzene hydroperoxide and cumene hydroperoxide into phenol and MEK and acetone)

IT Bond cleavage

(catalysts; acids for the conversion of secondary-butylbenzene hydroperoxide and cumene hydroperoxide into phenol and MEK and acetone)

IT Bond cleavage

(of secondary-butylbenzene hydroperoxide and cumene hydroperoxide into phenol and MEK and acetone)

IT 98-86-2P, Acetophenone, preparation

RL: BYP (Byproduct); PREP (Preparation)

(oxidative and cleavage process for the preparation of phenol and MEK and acetone from mixts. of secondary-butylbenzene and cumene)

IT 98-82-8, Cumene 135-98-8 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(oxidative and cleavage process for the preparation of phenol and MEK and acetone from mixts. of secondary-butylbenzene and cumene)

IT 80-15-9P, Cumene hydroperoxide

52208-72-7P, sec-Butylbenzene

hydroperoxide

RL: RCT (Reactant); SPN (Synthetic preparation);

PREP (Preparation); RACT (Reactant or reagent)

(oxidative and cleavage process for the preparation of phenol and MEK and acetone from mixts. of secondary-butylbenzene and cumene)

IT 67-64-1P, Acetone, preparation 78-93-3P,

MEK, preparation 108-95-2P, Phenol,

preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(oxidative and cleavage process for the preparation of phenol and MEK and acetone from mixts. of secondary-butylbenzene and cumene)

IT 80-15-9P, Cumene hydroperoxide

52208-72-7P, sec-Butylbenzene

hydroperoxide

RL: RCT (Reactant); SPN (Synthetic preparation);

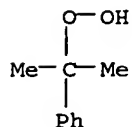
PREP (Preparation); RACT (Reactant or reagent)

(oxidative and cleavage process for the preparation of phenol and

MEK and acetone from mixts. of secondary-butylbenzene
and cumene)

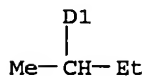
RN 80-15-9 HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



RN 52208-72-7 HCAPLUS

CN Hydroperoxide, (1-methylpropyl)phenyl (9CI) (CA INDEX NAME)

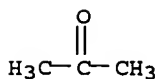


IT 67-64-1P, Acetone, preparation 78-93-3P,
MEK, preparation 108-95-2P, Phenol,
preparation

RL: SPN (Synthetic preparation); PREP (Preparation)
(oxidative and cleavage process for the preparation of phenol and
MEK and acetone from mixts. of secondary-butylbenzene
and cumene)

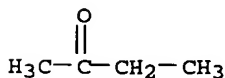
RN 67-64-1 HCAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)



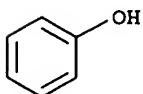
RN 78-93-3 HCAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



RN 108-95-2 HCAPLUS

CN Phenol (8CI, 9CI) (CA INDEX NAME)



RETABLE

| Referenced Author (RAU) | Year (RPY) | VOL (RVL) | PG (RPG) | Referenced Work (RWK) | Referenced File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| Anon | 1987 | 011 | C-454 | PATENT ABSTRACTS OF | |
| Dainippon Ink & Chem In | 1987 | | | JP--62114922 A | HCAPLUS |

L52 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:49178 HCAPLUS

DN 130:140785

TI Method and apparatus for manufacture of phenols from aromatic hydroperoxides

IN Hachisaka, Naoto; Takeda, Noriyuki

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----------------|------|----------|-----------------|----------|
| JP--11012211 | A2 | 19990119 | 1997JP-0170217 | 19970626 |
| 1997JP-0170217 | | 19970626 | | |

OS MARPAT 130:140785

AB In the manufacture of phenols through the cleavage of aromatic hydroperoxide intermediates using acid catalysts, the reaction conditions (e.g. reaction temperature) are controlled while monitoring the concns. of residual aromatic hydroperoxides of reaction products using 800-2500 nm near-IR absorption and maintaining them in a desired range. Concns. of catalysts or H2O in the acetone solns. of catalysts may also be monitored by near-IR absorption. Phenols are stably manufactured in high yield.

IC ICM C07C-0039/04

ICS C07C-0037/08; C07C-0039/00; C07B-0061/00

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 25

ST phenol manuf arom hydroperoxide cleavage reaction; acid catalyst cleavage arom hydroperoxide phenol manuf; near IR absorption process control phenol manuf

IT IR spectroscopy

(near-IR; process control in method for manufacture of phenols from aromatic hydroperoxides)

IT Hydroperoxides

RL: RCT (Reactant); RACT (Reactant or reagent)

(process control in method for manufacture of phenols from aromatic hydroperoxide intermediates)

IT Bond cleavage

Decomposition catalysts

Process control

(process control in method for manufacture of phenols from aromatic hydroperoxides)

IT Phenols, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(process control in method for manufacture of phenols from aromatic hydroperoxides)

IT 1343-93-7, Phosphotungstic acid 7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 16872-11-0, Borofluoric acid

RL: CAT (Catalyst use); USES (Uses)

(catalysts; process control in method for manufacture of phenols from aromatic hydroperoxides)

IT 108-95-2P, Phenol, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(process control in method for manufacture of phenols from aromatic hydroperoxides)

IT 80-15-9, Cumene hydroperoxide 26444-17-7,

102(b)
Date

Cymene hydroperoxide 29014-32-2, Diisopropylbenzene peroxide

RL: RCT (Reactant); RACT (Reactant or reagent)

(process control in method for manufacture of phenols from aromatic hydroperoxides)

IT 67-64-1, Acetone, uses

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; process control in method for manufacture of phenols from aromatic hydroperoxides)

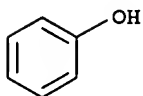
IT 108-95-2P, Phenol, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(process control in method for manufacture of phenols from aromatic hydroperoxides)

RN 108-95-2 HCAPLUS

CN Phenol (8CI, 9CI) (CA INDEX NAME)



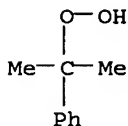
IT 80-15-9, Cumene hydroperoxide

RL: RCT (Reactant); RACT (Reactant or reagent)

(process control in method for manufacture of phenols from aromatic hydroperoxides)

RN 80-15-9 HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



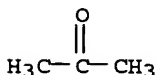
IT 67-64-1, Acetone, uses

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; process control in method for manufacture of phenols from aromatic hydroperoxides)

RN 67-64-1 HCAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)



L52 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:964997 HCAPLUS

DN 124:59866

TI Phenol, acetone, and alpha-methylstyrene production by cumene hydroperoxide cleavage

IN Blackburn, Robert L.; Allan, Edgar D.; Le, Loc B.; Patel, Snehal

PA Shell Oil Co., USA

SO U.S., 6 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--------------|------|----------|-----------------|----------|
| PI | US---5463136 | A | 19951031 | 1994US-0363437 | 19941222 |

102(b)
Date

PRAI 1994US-0363437 19941222

AB In this title process, cumene hydroperoxide (I) and sulfuric acid are reacted in a reflux cooled reactor, the products of which are transported under inhibited conditions to a plug flow reactor, and there reacted to produce PhOH, Me₂CO, and alpha-methylstyrene. A heat exchanger is used to obtain and maintain the inhibited conditions of the transported reactor products. Water and/or Me₂CO are also used to maintain inhibited conditions of the transported reactor products. I was cleaved in the presence of 200 ppm H₂SO₄, 0.5% water, 2.5% Me₂CO, 10 min in first reactor and 1.5 min in the second reactor at 127°; giving heavies/PhOH ratio 0.0695.

IC ICM C07C-0037/08

INCL 568385000

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 35

ST cumene hydroperoxide cleavage cooling condition;
phenol acetone methylstyrene manuf; heat exchanger
cleavage cumene hydroperoxide

IT Heat-exchange apparatus
(for inhibiting reaction in transport; phenol, acetone, and alpha-methylstyrene production by cumene hydroperoxide cleavage)

IT 67-64-1P, Acetone, preparation 98-83-9P,
.α.-Methylstyrene, preparation 108-95-2P, Phenol
, preparation
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(phenol, acetone, and alpha-methylstyrene production by cumene hydroperoxide cleavage)

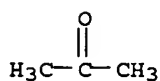
IT 80-15-9, Cumene hydroperoxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(phenol, acetone, and alpha-methylstyrene production by cumene hydroperoxide cleavage)

IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(severity inhibitor; phenol, acetone, and alpha-methylstyrene production by cumene hydroperoxide cleavage)

IT 67-64-1P, Acetone, preparation 108-95-2P,
Phenol, preparation
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(phenol, acetone, and alpha-methylstyrene production by cumene hydroperoxide cleavage)

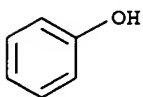
RN 67-64-1 HCAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)



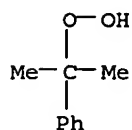
RN 108-95-2 HCAPLUS

CN Phenol (8CI, 9CI) (CA INDEX NAME)



IT 80-15-9, Cumene hydroperoxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(phenol, acetone, and alpha-methylstyrene production by

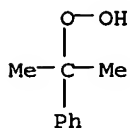
cumene hydroperoxide cleavage)
 RN 80-15-9 HCAPLUS
 CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



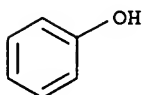
- L52 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1992:83085 HCAPLUS
 DN 116:83085
 TI Heterolytic and homolytic decomposition of cumyl hydroperoxide on heterogeneous catalysts
 AU Timofeev, S. V.; Smirnova, A. L.; Blyumberg, E. A.
 CS Inst. Khim. Fiz. im. Semenova, Moscow, USSR
 SO Kinetika i Kataliz (1991), 32(6), 1371-6
 CODEN: KNKTA4; ISSN: 0453-8811
 DT Journal
 LA Russian
 AB Decomposition of cumyl hydroperoxide (I), a model oxidation intermediate, in presence of MoSe₂ and WSe₂, antioxidants for cyclohexene, proceeded primarily via a heterogeneous O-O bond cleavage pathway, affording PhOH and Me₂CO. The presence of dimethylphenylcarbinol (5-10%) was evidence of some degree of homolytic decomposition. The rate of heterolytic to homolytic rates was 24 ± 10 L/mol over MoSe₂, and 90 ± 32 L/mol for WSe₂. Autoaccelerated decomposition of I was observed when the selenides were present in low concentration (< 20 mM/L) and was attributed to variation in the metal valence induced by reaction intermediates. MoSe₂ was the more active catalyst for decomposition of I.
 CC 22-8 (Physical Organic Chemistry)
 Section cross-reference(s): 67
 IT Decomposition catalysts
 (molybdenum and tungsten diselenides, for cumyl hydroperoxide, heterolytic vs. homolytic paths)
 IT Kinetics of decomposition
 (oxygen-oxygen bond cleavage, heterolytic vs. homolytic, of cumyl hydroperoxide in presence of molybdenum and tungsten hydroperoxides)
 IT Decomposition
 (oxygen-oxygen bond cleavage, heterolytic vs. homolytic, of cumyl hydroperoxide in presence of molybdenum and tungsten hydroperoxides, mechanism of)
 IT Bond cleavage
 (oxygen-oxygen, heterolytic vs. homolytic, in decomposition of cumyl hydroperoxide in presence of molybdenum and tungsten diselenides)
 IT 12058-18-3, Molybdenum diselenide 12067-46-8, Tungsten diselenide
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for decomposition of cumyl hydroperoxide)
 IT 80-15-9, Cumyl hydroperoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (decomposition of, in presence of molybdenum and tungsten diselenides, heterolytic vs. homolytic paths in)
 IT 108-95-2P, Phenol, preparation
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in heterolytic decomposition of cumyl hydroperoxide over molybdenum and tungsten diselenides)
 IT 98-83-9P, α-Methylstyrene, preparation 617-94-7P, Dimethylphenylcarbinol
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in homolytic decomposition of cumyl

102(b)
Date

hydroperoxide over molybdenum and tungsten diselenides)
 IT 80-15-9, Cumyl hydroperoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (decomposition of, in presence of molybdenum and tungsten diselenides,
 heterolytic vs. homolytic paths in)
 RN 80-15-9 HCAPLUS
 CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



IT 108-95-2P, Phenol, preparation
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in heterolytic decomposition of cumyl
 hydroperoxide over molybdenum and tungsten diselenides)
 RN 108-95-2 HCAPLUS
 CN Phenol (8CI, 9CI) (CA INDEX NAME)

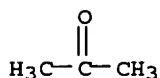


L52 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1989:533710 HCAPLUS
 DN 111:133710
 TI Composition of the products of cumene hydroperoxide
 heterolysis in aqueous hydrochloric acid solutions
 AU Bushmakina, L. G.; Kislina, I. S.; Antonovskii, V. L.; Zakoshanskii, V. M.;
 Vinnik, M. I.
 CS Inst. Khim. Fiz., Moscow, USSR
 SO Kinetika i Kataliz (1989), 30(1), 227-8
 CODEN: KNKTA4; ISSN: 0453-8811
 DT Journal
 LA Russian
 OS CASREACT 111:133710
 AB Heterolysis of cumene hydroperoxide in aqueous solns. of
 HCl (3, 10, and 25.8%), to give PhOH and Me2CO in addition to equimol. amts.
 of H2O2 and Ph2C(OH)Me, was studied by an iodometric method.
 CC 25-11 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 ST heterolytic bond cleavage cumene hydroperoxide;
 iodometry bond cleavage cumene hydroperoxide
 IT Bond cleavage
 (of hydroperoxide in cumene hydroperoxide by aqueous
 hydrochloric acid iodometry in relation to)
 IT 67-64-1P, Acetone, preparation 108-95-2P,
 Phenol, preparation 617-94-7P, α,α-Dimethylbenzyl
 alcohol 7722-84-1P, Hydrogen peroxide, preparation
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in heterolytic bond cleavage of cumene
 hydroperoxide by aqueous hydrochloric acid)
 IT 80-15-9, Cumene hydroperoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (heterolytic bond cleavage of, in aqueous hydrochloric acid)
 IT 67-64-1P, Acetone, preparation 108-95-2P,
 Phenol, preparation
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in heterolytic bond cleavage of cumene

hydroperoxide by aqueous hydrochloric acid)

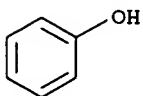
RN 67-64-1 HCAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)



RN 108-95-2 HCAPLUS

CN Phenol (8CI, 9CI) (CA INDEX NAME)



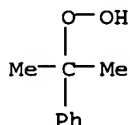
IT 80-15-9, Cumene hydroperoxide

RL: RCT (Reactant); RACT (Reactant or reagent)

(heterolytic bond cleavage of, in aqueous hydrochloric acid)

RN 80-15-9 HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



L52 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1985:95388 HCAPLUS

DN 102:95388

TI Production of phenol

IN Chang, Clarence Dayton; Pelrine, Bruce Patrick

PA Mobil Oil Corp. , USA

SO Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------------------|------|----------|-----------------|----------|
| PI | EP----125065 | A1 | 19841114 | 1984EP-0302759 | 19840425 |
| | R: BE, DE, FR, GB, IT, NL | | | | |
| | US---4490566 | A | 19841225 | 1983US-0492104 | 19830506 |
| | CA---1204781 | A1 | 19860520 | 1984CA-0452753 | 19840425 |
| | ZA---8403202 | A | 19851224 | 1984ZA-0003202 | 19840430 |
| | AU---8427558 | A1 | 19841108 | 1984AU-0027558 | 19840501 |
| | JP--59210036 | A2 | 19841128 | 1984JP-0089592 | 19840507 |
| PRAI | 1983US-0492104 | A | 19830506 | | |

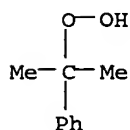
AB PhOH and Me₂CO are produced by cleavage of PhCMe₂OOH (I) in the presence of a solid heterogeneous catalyst with acidic activity comprising an intermediate pore size zeolite. Thus, a feed consisting of a I 97.67, cumene 11.04, PhCMe₂OH 6.47, MeCOPh 2.56, and PhCMe:CH₂ 0.26% was introduced into a downflow reactor containing zeolite ZK-5 at 130° for 4.63 h to give a mixture containing Me₂CO 22.92, cumene 12.14, PhCMe:CH₂ 18.93, PhCMe 9.51, PhCMe₂OH 0.65, PhOH 3.59, and I 3.86%.

IC C07C-0037/08; C07C-0045/53; C07C-0039/04; C07C-0049/08; C07C-0027/00

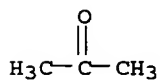
CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 23

102(b)
Date

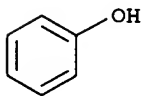
ST phenol; acetone; cumene
hydroperoxide cleavage catalyst
IT Zeolites, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for cleavage of cumene hydroperoxide,
phenol and acetone from)
IT Bond cleavage
(of cumene hydroperoxide over zeolites,
phenol and acetone from)
IT 80-15-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(cleavage of, phenol and acetone from, catalyst
for)
IT 67-64-1P, preparation 108-95-2P, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by cleavage of cumene hydroperoxide)
IT 80-15-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(cleavage of, phenol and acetone from, catalyst
for)
RN 80-15-9 HCAPLUS
CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



IT 67-64-1P, preparation 108-95-2P, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by cleavage of cumene hydroperoxide)
RN 67-64-1 HCAPLUS
CN 2-Propanone (9CI) (CA INDEX NAME)



RN 108-95-2 HCAPLUS
CN Phenol (8CI, 9CI) (CA INDEX NAME)



=> d his

(FILE 'HOME' ENTERED AT 14:57:10 ON 03 JUL 2006)

FILE 'HCAPLUS' ENTERED AT 14:57:45 ON 03 JUL 2006

L1 2 US2004162446/PN OR (US2004-761675 OR US2003-447845)/AP, PRN
E BLACK J/AU
L2 67 E3
L3 19 E31-32
E BLACK JESSE/AU
L4 5 E4-5

L5 4533 (SHELL OIL)/CS,PA

FILE 'REGISTRY' ENTERED AT 15:00:21 ON 03 JUL 2006

FILE 'HCAPLUS' ENTERED AT 15:00:21 ON 03 JUL 2006

L6 TRA L1 1- RN : 15 TERMS

FILE 'REGISTRY' ENTERED AT 15:00:22 ON 03 JUL 2006

L7 15 SEA L6
L8 8 L7 AND 46.150.18/RID
L9 1 80-15-9
L10 3568 C9H12O2
L11 6994 C10H14O2
L12 3198 L10-11 AND 46.150.18/RID
L13 73 L12 AND (CUMENE OR PHENYLETHYL OR METHYLPROPYL (1A) PHENYL)
L14 39 L13 NOT COMPD
L15 38 L14 NOT D/ELS
L16 28 L15 NOT PMS/CI
SEL RN 2 6-8 16-23 28
L17 13 E1-13 AND L16
L18 4 L11 AND L17
SEL RN 2-13 L17
L19 12 E14-25 AND L17
E PHENOL/CN
L20 1 E3
L21 8917 C6H6O AND 46.150.18/RID
L22 2 67-64-1 OR 78-93-3
L23 81712 C3H6O OR C4H8O

FILE 'HCAPLUS' ENTERED AT 15:14:27 ON 03 JUL 2006

L24 6354 L19
L25 2395 CUMYLPEROXY OR (S OR SEC) (1N) BUTYLBENZENE (1N) HYDROPEROXIDE O
L26 7287 PHENYLISOPROPYL (1N) HYDROPEROXIDE OR CUMENE HYDROPEROXIDE
L27 1959 (PHENYLPROPYL OR CUMEN OR ISOPROPYLBENZENE) (1N) HYDROPEROXIDE
L28 11662 L24-27
L29 362415 L21, L23
L30 310348 PHENOL OR BENZENOL OR CARBOLIC ACID OR ENT1814 OR ENT 1814 OR ?
E PHENOL/CT
E E3+ALL
L31 75669 E10+NT
E PHENOLS/CT
E PHENOLS/CT
L32 66704 E3-42
E E43+ALL
E PHENOLS/CT
E E3+ALL
L33 738656 E9+NT
E PHENOLS, PREP/CT
L34 3090 E4
L35 1879 E5
L36 55448 L30-33 (L) PREP+NT/RL
L37 57450 L34-36
L38 241081 (2 OR 3) (1N) BUTANONE OR BUTANONE OR METHYL (1A) ETHYL (2A) KETONE
L39 12545 L38 (L) PREP+NT/RL
L40 487 L37, L39 AND L28
L41 2 L40 AND L1-5
L42 284 L28 (L) RACT+NT/RL AND L40
L43 2 L42 AND L1-5
L44 282 L42 NOT L43
E BOND CLEAVAGE/CT
L45 10479 E3-28
E E3+ALL
L46 10526 E4+OLD
L47 10 L44 AND L45-46
SEL AN 2-10
L48 9 E1-18 AND L47

| | |
|-----|-------------------|
| L49 | 11 L48,L41,L43 |
| L50 | 2 L49 AND L1-5 |
| L51 | 11 L49 AND L24-48 |
| L52 | 11 L49-51 |

=>